Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

Reserve
1.9622
N2St22

U.S. DEPT. OF AGRICULTURE
LIBRARY
JUN 28 1961
CURRENT SERIAL RECORDS

REHABILITATION OF FIRE-DAMAGED FOREST LANDS IN SOUTHWESTERN MAINE

by

A. D. Nutting
James C. Rettie
Wayne G. Banks

Northeastern
Forest Experiment Station
Upper Darby, Pa.
V.L. Harper, Director

STATION PAPER No. 23

FEBRUARY 1949

FOREWORD

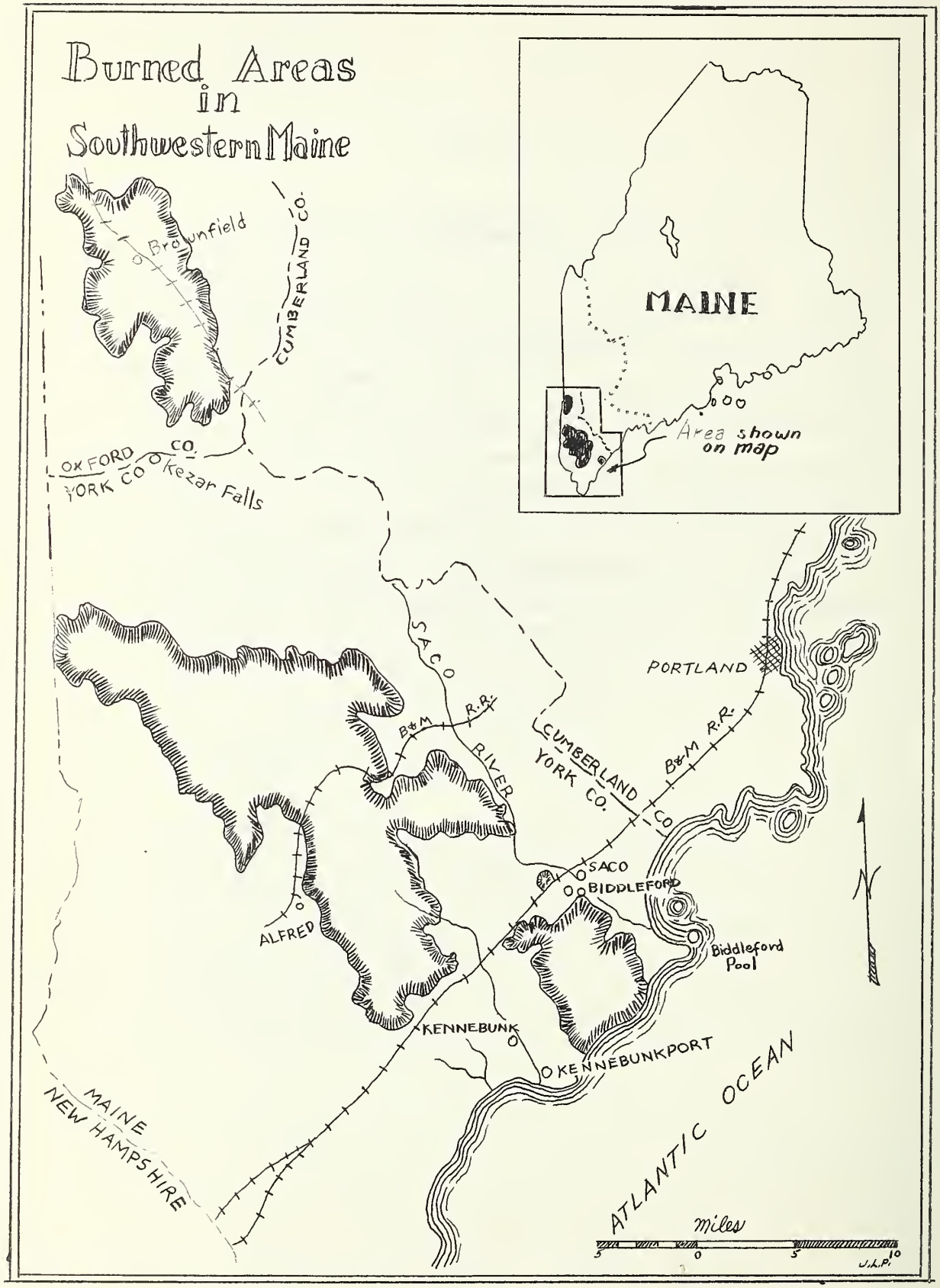
Recignizing that it can ill afford the loss of timber productivity on the large acreage of forest land burned over by the 1947 fires, the State of Maine requested assistance of the Northeastern Forest Experiment Station of the United States Forest Service in a program of research that would aid in the rehabilitation of the burned-over forest land.

The first phase of this work, initiated just after the fire, consisted of a field survey to determine the location and the volume of fire-killed timber that could be salvaged. This job was completed in December 1947 and provided a substantial basis for the salvage program. The next step involved experiments in the seeding and planting of burned-over land on the Massabesic Experimental Forest near Alfred. These are designed to provide necessary information that will be useful in reforesting the whole burned area. Further studies of the extent of tree mortality and the indications of incoming reproduction were summarized in Station Paper No. 19, "Observations on Fire-Damaged White Pine in Southwestern Maine," published in August 1948.

A fourth phase of these studies has dealt with the land ownership situation, and with the attitudes of the landowners toward the rehabilitation problem. It has also involved a tentative estimate of the land acreage that, apparently, will not reforest to pine naturally and of the financial outlay that would be required to produce nursery stock sufficient to plant 25,000 acres of high-priority land within a reasonable time. The results of this last investigation are summarized in this progress report.

CONTENTS

Extent of burned area 1
Salvage cutting and income therefrom 2
The loss to the economy of the State of Maine 3
The present land ownership situation 4
Owner interest in holding these lands 6
Owner attitudes toward rehabilitation 9
Tentative classification of burned-over land 10
Estimated cost of expanding State's nursery facilities... 11
Organization of a land rehabilitation program 13
Tables 15


Burned Areas
in
Southwestern Maine
Braunfield
CUMBERLAND CO.
OXFORD CO.
YORK CO.
Kezar Falls
MAINE
Area shown on map
SACO
R.R.
B&M
RIVER
CUMBERLAND
YORK CO.
PORTLAND
B&M R.R.
SACO
BIDDLEFORD
ALFRED
Biddleford Pool
KENNEBUNK
KENNEBUNKPORT
MAINE
NEW HAMPSHIRE
ATLANTIC OCEAN
miles
5
0
5
10
J.L.P.

REHABILITATION OF FIRE-DAMAGED FOREST LANDS IN SOUTHWESTERN MAINE

by

A. D. Nutting[1]
James C. Rettie[2]
and
Wayne G. Banks[3]

Extent Of The Burned Area

Approximately 150,000 acres of land in southwestern Maine were burned over in the disastrous forest fires of 1947. Of this total, some 130,000 acres, or 86 percent, were forest lands.

Something like 80,000 acres of this forest land was in a cut-over condition, but even so, it had a cover of seedlings and saplings and scattered left-over cull trees. The volume of timber on this cut-over area was less than 5 cords per acre.

About 25,000 acres of the forest land bore a stand of young pole timber with an over-all average volume of 15 cords per acre. Most of this forest was in a condition of thrifty growth. It was the potential source of saw timber for the community's mills 10 to 20 years from now. Practically all of it was killed by the fire.

---

[1] Forest Commissioner, Maine Forest Service, Augusta, Me.
[2] In charge, forest economics investigations, Northeastern Forest Experiment Station.
[3] Forest economist, Northeastern Forest Experiment Station.

The remaining 25,000 acres carried a stand of saw timber[4]--principally white pine. The over-all average volume per acre was about 6.9 thousand board feet. A field survey made by the Northeastern Forest Experiment Station of the U. S. Forest Service immediately after the fire indicated a total volume of about 168 million board feet of saw-timber trees on this saw-timber acreage. Another 43 million board feet of saw timber was in scattered trees throughout the pole-timber stands--making a total saw-timber volume of 211 million board feet.

Salvage Cutting And Income Therefrom

Salvage cutting of the burned saw timber began very soon after the fire. By the end of 1948, about 125 million board feet had been cut or was under contract for cutting. This great step-up in cutting has entailed a considerable increase in the number of portable sawmills operating within or near the burned area. As these mills run out of burned timber there is a serious tendency to overcut the green timber stands in adjacent areas.

Most of the fire-killed saw timber that is still uncut is in tracts too small or too sparse to be economically operable. A considerable volume of low-grade hardwood has also been left, largely because there has never been a market for such material in this particular locality. The bulk of the fire-killed pole timber has not been salvaged, and there is virtually no chance that it will be cut.

The stumpage price obtained for this salvaged saw timber has probably averaged about $9 per thousand board feet with a range of prices from a minimum of $3 to over $20. On this basis, the gross return to the landowners who have sold fire-killed timber must have been close to $1,125,000. The lumber sawed from this fire-killed saw timber has been selling at prices from $50 per thousand board feet and upward. The gross proceeds must, therefore, have exceeded $6,000,000. This money has been

---

[4]A saw-timber stand is defined as one that contains a minimum volume of 1.5 thousand board feet of softwood trees from 9 inches diameter (breast height) and up.

disbursed as stumpage payments, as wages to the logging and milling crews, to pay other operating expenses, and as profit margins to mill owners. It has been a substantial flow of income providing an effective cushion against the immediate economic shock of the fire, but the end of such timber salvage income is now in sight. There will be no <u>further</u> timber harvest from most of the burned lands for many years to come.

<u>The Loss To The Economy Of The State Of Maine</u>

The actual loss to the economy of the State of Maine can best be understood by visualizing the annual income that would have been generated had these lands not lost their stands of live timber. About 50,000 acres were in fairly good productive condition. The saw-timber stands had an average annual growth of about 350 board feet per acre. The board-foot equivalent growth in the pole-timber stands was probably about 175--making an over-all average for the entire area of about 250 board feet per acre. On this basis the 50,000 acres of fairly well stocked forest land would have supported an average annual cut of 12.5 million board feet. This volume would have been sufficient to supply 25 sawmills, each cutting 500 thousand board feet per year. A mill of this size annually provides about 6 man-years of employment. All 25 mills would provide 150 man-years. Another 50 man-years of employment would have been available in local box factories utilizing lumber cut in the local sawmills. Total annual employment generated by the harvesting and processing of the 12.5 million board feet of timber would have been at least 200 man-years.

Wage income, estimated on the basis of a 75 cents per hour average for a 40-hour week and 45 weeks per year, would have added up to about $270,000. Stumpage income at the current average price of $9 per thousand board feet would have come to $112,500. Further income to the local community for supplies and equipment purchased by the mills, operators' profit margin, interest on borrowed capital, etc., would have pushed the total annual income to somewhere near $450,000. This is the approximate annual direct monetary loss to the economy of the State of Maine if these 50,000 acres of burned-over lands are permitted to remain in their present

unproductive condition. The ultimate annual loss is probably twice this figure if the 80,000 acres of cut-over land are also included.

The Present Land Ownership Situation

Decisions on what can or should be done to rehabilitate these lands will, of course, not be made solely on the basis of what would be best in the long run for the over-all economy. Whatever rehabilitation measures are proposed must take account of the desires and the plans of the people who now own the lands. It was with this in mind that the Forest Commissioner for the State of Maine requested the assistance of the Northeastern Forest Experiment Station in making a study of the existing ownership situation, including an inquiry about the attitudes and intentions of the landowners.

With the help of selectmen in each of the burned-area towns, it has been possible to compile a list of 740 persons and corporations who own 10 or more acres of land in the Waterboro-Brownfield fire areas.[5] These 740 owners hold about 70 percent of the burned acreage. Their holdings certainly provide a large sample of the total burn. There is probably some deficiency in representation of the more inaccessible properties because the selectmen have limited personal knowledge of such lands.

This list of 740 landowners was used as the basis for an analysis of town tax-record information summarized in the following paragraphs.

The total number of owners holding land within the burned area is probably about 1,000. About 56 percent of them are residents of the town in which their land is located. This group holds 60 percent of the total acreage. The 44 percent of the owners who do not live within the town are residents of nearby towns or live at some distance. The percentage who live in other states is relatively small.

---

[5]Town selectmen in the Kennebunk fire area have not yet supplied such information.

The distribution of owners by size of their land holdings is as follows:

Owners (percent)	Size of holding (acres)
14	10 to 24
19	25 to 49
19	50 to 74
29	75 to 149
16	150 to 499
3	500 or more

Approximately 80 percent of the owners (about 800) hold less than 150 acres. One-half (about 500) own less than 75 acres. There are probably not more than 50 whose holdings exceed 500 acres. Only 3 owners have more than 1,000 acres of burned land.[6] About 15 of the larger owners of land within the burned area have substantial blocks of land outside it. The main picture, however, is one of the small owner whose entire land holding was heavily damaged.

About 57 percent of the properties had buildings of some kind prior to the fire. Many were farm buildings that still stood after the land had ceased to be used for agriculture. About half of the buildings were lost in the fire. The properties on which buildings were saved or have been rebuilt represent about 34 percent of the total. This loss of buildings will probably tend to bring about a gradual consolidation of those small holdings which no longer have buildings. About 40 percent of the resident owners who lost buildings have rebuilt or have plans to do so. Only about 11 percent of the nonresident owners who lost buildings have rebuilt or intend to rebuild.

Of the properties owned by residents, about 45 percent were located

---

[6] If Massabesic Experimental Forest (owned by the Federal Government) is included the number is four.

on an improved road or lakeshore. Only 23 percent of those held by the nonresidents are so located.

Tax delinquency is practically nonexistent. Less than 1 percent of the owners are delinquent in the payment of taxes. The acreage involved is only 0.7 of 1 percent. It is, of course, quite likely that tax delinquency will soon become a problem.

The present assessed valuation of all the land in the burned areas averages $3.98 per acre. Tax rates have been averaging about 7 cents on the dollar of assessed value. This works out at about 28 cents per acre. Assessed valuations of some of the burned lands have not yet been adjusted downward. Some towns have fixed the assessed valuation of burned land at $2 per acre. With a tax rate of 7 cents, this will amount to 14 cents per acre annually. A 100-acre property will have to carry a tax of $14 per year.

The State of Maine has a statute that provides tax exemption for tree plantations during the first 20 years. This concession would be of material assistance to those owners who may do some planting. There is good reason for extending some similar encouragement for other forest land rehabilitation measures such as seeding and weeding. The period of exemption should probably be extended to 40 years, which is about the minimum time required to grow any merchantable timber products, such as pulpwood from thinnings.

Owner Interest In Holding These Lands

The various reasons that have led people to hold or acquire lands in the burned areas are important in the consideration of rehabilitation. Information on this and on related matters was obtained by means of a letter and questionnaire that were sent to the full list of 740 landowners. About 35 percent responded by filling out and returning the questionnaire.

It is, of course, necessary to be somewhat cautious in drawing generalized conclusions from data obtained by this means. Undoubtedly, the

questionnaire respondents do include more than the normal proportion of landowners who have an active interest in the present and future condition of their lands.

In answer to the question, "What has been your principal reason for owning this land?", the respondents gave the following replies:

	Percent
As a source of income from timber	29
As a full-time farm	15
As a part-time farm	12
As a summer home or hunting camp	9
As a place to live	25
Because of sentimental attachment	3
Miscellaneous other reasons	7

The fact that less than 30 percent of the respondents indicated that their land had been held mainly for timber production has some important implications. The other 70 percent of landowners who were not primarily concerned with the timber values on their land will probably be less willing to make the investment that may be necessary to get a merchantable stand of timber re-established. Many of them will tend to be satisfied with whatever trees may come in--even the poorest kind of hardwoods (such as gray birch and soft maple) may be accepted without realiz at such forest cover has very low value for timber-production. There is, apparently, a need for considerable educational effort to create a better understanding of the timber-producing value of these lands and of the program that is required to restore their timber productivity within a reasonable time.

It is common knowledge that full-time farming, and even part-time farming, had reached a low level prior to the fire. The fact that 15 percent of the respondents said that they were holding their land as a full-time farm, and 12 percent indicated part-time farming as the reason for holding land, probably needs to be discounted. It is fairly obvious that the proportion of farmers who answered the questionnaire is higher than for other types of owners. The Federal Census of Agriculture for 1945 clearly shows that farming was a minor type of land use in the towns where

the burned lands are located. There will, no doubt, be some further abandonment of farms--especially of those that lost buildings in the fire.

Some 25 percent of questionnaire respondents listed "place to live" as a principal reason for holding land. Here is one very important aspect of the land ownership situation in this particular locality. As the road system has improved there has been a gradual conversion of abandoned farms into country residences. In this process, the land has gone out of agricultural use and into forest or brush or wild open pasture, but the old farm buildings have remained occupied and in reasonably good repair. Quite often these country-residence units contain the entire acreage that had been in the old farm. Many have been acquired, over the years, by people who wanted a low-cost house. The old farm with its entire set of buildings and land was available at a price considerably lower than the cost of a small house in any nearby village or city. People could live in these country residences and drive daily to a job in Sanford, Biddeford, or some other nearby community.

In these instances where the old house was lost in the fire, there is uncertainty about the wisdom of rebuilding, because the cost of a new house on these country roads is not likely to be any less than the cost of a similar house in some village or suburban area nearer to the place of employment. In those instances where the house did not burn, it will most likely continue to serve as a "place to live". The owners of such homes will probably hang onto them. A considerable number seem to be interested in land rehabilitation but their financial resources out of which they might pay for planting or for other rehabilitation measures are strictly limited. Otherwise, most of them would not be living where they are.

"Use for summer home or hunting camp" was listed as a principal reason for land ownership by 9 percent of the questionnaire respondents. The majority of these properties, according to the town selectmen, are located on the shores of lakes and ponds. Scenic beauty is a primary

concern with such owners. Many of them will, no doubt, carry out a rehabilitation program to restore wooded lakeshores.

Owners' Attitudes Toward Rehabilitation

In replying to the question, "Have you reserved from cutting any live trees as a source of seed?", about half of the respondents reported that such trees had been left. Whether this high a proportion of the total number of owners took such steps is doubtful. However, it is encouraging to know that a substantial number have tried to see that their land was not left totally devoid of any source of seed. Many respondents who could not say "yes" to this question explained that no living trees survived the fire. Others said that they had a few living trees but not enough to provide an adequate seed source.

Out of the 204 landowners that answered the questionnaire, 91 expressed no possitive interest in timber rehabilitation measures. There is apparently, a prevailing erroneous conviction that little or nothing can be done.

Of the 113 that did indicate some interest 37 failed to specify any specific measures that they would be willing to consider. The remaining 76 did indicate specifically what they would be willing to consider:

40 will consider slash disposal to prevent reburn at a probable cost of $2 to $5 per acre.

19 will consider weeding to keep down undesirable species and release the more valuable species at a probable cost of $4 to $6 per acre.

34 will consider direct seeding with its attendant risks of failure at a probable cost of about $5 per acre.

21 will consider tree planting at a probable cost to the landowner of from $20 to $25 per acre.

Here again, the respondents undoubtedly include a higher than average proportion of the more responsible and far-seeing owners; but even so there is, unquestionably, a substantial landowner interest in specific rehabilitation measures.

Answering the point-blank question, "Do you intend to continue to hold your burned-over land?", the respondents gave the following indications of their present intentions:

74 percent intend to continue to hold
9 percent are uncertain
14 percent do not intend to hold
2 percent failed to answer the question

If those indications are anywhere near the same as for all the owners of burned lands, it is safe to say that any acquisition program for blocking the burned land into fairly large units for either private or public management would, at least for the present, be slow and costly.

Tentative Classification Of The Burned-Over Land

Decisions as to the kind of rehabilitation program that would be desirable and feasible should be based in part upon the quality and present condition of the burned-over land. Exact estimates of the acreage that can reasonably be expected to restock naturally, and of the acreage that will require planting or some other type of rehabilitation treatment can be made only by a field survey. Rough tentative estimates, however, based on information already available from the timber survey made after the fire and from observations since, can now be offered. The general picture is summarized as follows:

1. Area where artificial regeneration will apparently be needed--

	Acres
Fields no longer used for agriculture	7,000
Lands that had stands of young timber	11,000
Lands that have been salvage-cut	4,000
Pitch pine plains	8,000
Brush areas	10,000
Total	40,000

2. Area where natural regeneration can reasonably be expected (some weeding and reinforcement planting may be desirable)--

	Acres
Lands that have been salvage-cut	40,000
Lands that have not been salvage-cut	30,000
Total	70,000

3. Area where planting or other measures are not feasible--

Swamps	12,000
Hardwood sprout areas	14,000
	26,000

4. Non-forested lands that should remain as they are 14,000

While it appears that about 40,000 acres are in need of artificial regeneration, the costs of such operations in brush-covered land and in areas where hardwood sprout growth will have a good head-start may be prohibitive at current prices. Research directed at the mechanization of planting and otherwise lowering cost may change the picture.

A fairly realistic estimate of the acreage that deserves high priority for planting might be 25,000 acres. This much could be planted within a 5-year period, beginning 3 or 4 years hence when the necessary trees could have been grown in a nursery. But if it is going to be done, there should be no long delay in getting started. The problem of hardwood sprout competition will become more difficult every year.

Experience has shown that about 1,000 transplants per acre are necessary to obtain adequate stocking for timber-production purposes. A 5,000 acre per year planting program would require about 5,000,000 nursery trees annually.

Estimated Cost Of Expanding State's Nursery Facilities

The forest nursery now maintained by the State of Maine at Orono has an annual capacity of only 250,000 transplants. This is far short of the 5,000,000 that would be needed to plant 25,000 acres within any reasonable time. Obviously, a large expansion of nursery capacity would be necessary.

Several alternate possibilities are worthy of consideration:

Table 1.--Comparison of nursery costs under three plans

Item	Plan A	Plan B	Plan C
Land	$10,000	$10,000	$10,000
Buildings	24,500	5,000	4,000
Water system[1]	13,500	13,500	13,500
Machinery	12,500	9,000	9,000
Hand tools	1,000	1,000	1,000
Screens and bedboards	1,000	1,000	1,000
Packing equipment	1,000	1,000	1,000
Roads	1,500	1,000	1,000
Fences, parking lots, windbreaks, etc.	2,000	500	500
Total	$67,000	$42,000	$41,000

[1]Through the use of a portable sprinkler system of the type used by truck gardeners, and by purchase of government-surplus pumpers, it might be possible to reduce this figure by 50 percent.

Plan A ($67,000) contemplates starting anew to establish a permanent forest nursery with a capacity of 5 million 2-1[7] transplants annually by purchasing all the necessary land and constructing the necessary buildings. Equipment sufficient for some mechanization of operations is included. A permanent nursery of this size would serve not only to provide the nursery stock for the burned-over lands in southwestern Maine, but after that job is done, it could product trees to plant many other large areas of forest land in need of artificial regeneration. There is a large acreage of such land in Washington County and elsewhere in the State.

Plan B ($42,000) contemplates a temporary setup in which the State might purchase a going farm with buildings suitable for remodeling. Cultivated land suitable for nursery purposes would, of course, be the primary consideration. Used equipment might be obtainable as part of the farm. Such a unit might be salable as a farm 10 to 15 years hence.

---

[7]Age and type of nursery stock are indicated by a number-designation system. A 2-1 designation means 2-year old seedlings that have been transplanted from the original seed beds for 1 year.

Plan C ($41,000) is based on the expansion of the present facilities at the University of Maine at Orono to produce 5 million 2-1 transplants annually, taking advantage of some facilities that would be available at no additional cost at the University.

Any one of these plans would probably be feasible. Decision as to which would be best could be made only after consideration of technical details by some competent group selected to do this specific job. At least 3 or 4 years would elapse before planting stock actually became available. Annual operating costs, not counting depreciation, would probably average about $15 per thousand transplants produced, or a total of $75,000 per year after the nursery has reached full production. The total investment in nursery and nursery stock up to the end of the time that full production is attained might be in the neighborhood of $200,000. After that, there could be some income from sale of stock--possibly 50 percent of the production cost. Such a public investment in nursery facilities does not seem excessive as a contribution to the rehabilitation of forest lands that are potentially capable of producing timber that will contribute several times that amount of sustained annual income to the economy of the area.

Organization Of A Land-Rehabilitation Program

The establishment of expanded State nursery facilities and production of 5 million transplants per year will not, of course, automatically insure that planting at the rate of 5,000 acres per year would immediately get started. Such a job could actually be done only through adequate organization and leadership.

The majority of the small landowners in the burned-over area are not well situated to carry on their own planting operations. Many of the farmers and rural residents could no doubt be induced to plant a few acres each year if stock were available at reasonable cost and if technical advice and other encouragement were also provided. Some services of this kind could probably be provided through a State Forest

Service farm forester program, the Extension Service, the Soil Conservation District, and various civic organizations. Volunteer groups like the 4-H clubs, service clubs, fish and game clubs, and others could also help. High-school groups could also give assistance in the actual planting work. The program should not be confined to planting but should also stress weeding, thinning, slash disposal, and other cultural treatments that will help to restore good stands of timber.

In addition to what could be done by individual ini tive, stimulated by educational programs, there would be need for the organization of planting crews to do the work for many landowners who could not do it for themselves. Organized crews of 40 or 50 trained men are more efficient than unorganized work. Such work could probably be done, on a fee basis, for $15 to $20 per acre. The crews could best be organized and supervised by some public agency--possibly by the towns or by the local Soil Conservation District. The important need is for an aggressive leadership by some organized group that can provide the necessary continuity and financial backing.

Some subsidies, town, county, state, or Federal, will undoubtedly be necessary in the planting and in cultural treatment, as well as in the supply of nursery stock. While such policies would be new in the State of Maine, they are not very different from the reclamation program that has been operating in the Western States for 50 years. These burned-over forest lands in Maine have fallen into a deteriorated condition that can now be remedied, within reasonable time, only by a positive reclamation program. Boiled down to this proposition, there is just as good reason for re-establishing the forests as there is for reclaiming unproductive farm land. Both types of land reclamation make excellent sense as a contribution to local and National wealth and welfare.

Table 2--Acreage and assessed valuation by tax status

Tax status	Ownerships	Taxable acreage	Assessed valuation
	Number	Acres	
Delinquent	7	605	$ 2,335
Not delinquent	587	64,730	237,828
Unclassified	146	18,842	94,700
Total	740	84,177	$334,863

Source: Town tax records.

Table 3.--Number and acreage of ownerships with and without buildings

Item	Ownership		Acreage	
	Number	Percent	Acres	Percent
With buildings	426	57	56,819	67
Without buildings	301	41	26,309	31
Unclassified	13	2	1,050	2

Source: Town tax records and Town selectmen.

Table 4.--Ownerships on which burned timber has been cut

Status of timber	Kind of ownership				
	Resident	Non-resident	Unclassified	Total	
	Number	Number	Number	Number	Percent
Burned timber has been cut	156	86	1	243	33
Burned timber has not been cut	21	21	0	42	6
No merchantable timber	108	120	1	229	31
Unclassified	130	81	15	226	30

Source: Town selectmen.

Table 5.--Ownerships on which burned buildings have been or will be rebuilt

Status of timber	Kind of ownership				
	Resident	Non-resident	Unclassified	Total	
	Number	Number	Number	Number	Percent
Burned buildings have been or will be rebuilt	53	11	0	64	27
Burned buildings will not be rebuilt	54	74	2	130	55
Rebuilding of burned buildings questionable	25	17	2	44	18
Intentions unknown	--	--	--	--	--
Total	--	--	--	238	100

Source: Town selectmen.

Table 6.--Accessibility of ownership

Location	Kind of ownership				
	Resident	Non-resident	Unclass-ified	Total	
	Number	Number	Number	Number	Percent
Land lies on improved road or lakeshore	185	72	4	261	35
Land not on improved road or lakeshore	223	225	1	449	61
Location relative to road or lakeshore unknown	7	11	12	30	4

Source: Town selectmen.

Table 7.--Various reasons given for owning forest land 1/

Reasons for owning land	Number of ownerships			
	Resident	Nonresident	Unclassifie	Total
As source of income from timber	50	42	7	99
As a full time farm	39	10	2	51
As a part time farm	26	14	1	41
As a summer home or hunting camp	5	21	5	31
As a place to live	64	21	3	85
Woodlot	1	0	0	1
Miscellaneous	9	14	0	23
Utilities	0	1	0	1
Sentiment	3	8	0	11

1/ There is considerable duplication here since numerous individuals indicated two or more reasons for owning the land.

Source: Mail questionnaire

Table 8.--Number of ownerships having land burned over, and acreage burned

Item	Resident		Nonresident		Unclassified		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Burned	108	15,479	74	10,172	12	6,412	194	32,063
Not burned	3	2	4	40	--	--	7	42
Unknown	3	165	1	--	--	--	4	165

Source: Mail questionnaire

Table 9.--Intentions regarding use of fields and open pastures

Intentions	Ownership		Acreage	
	Number	Percent	Acres	Percent
To use fields for farm purposes	105	53	4,995	65
Not to use fields for farm purposes	79	40	2,500	33
Intentions unknown	14	7	89	2

Source: Mail questionnaire

Table 10--Rebuilding of burned buildings

Status of building	Ownership		Acreage	
	Number	Percent	Acres	Percent
No buildings on land	45	23	20,952	34
Buildings present, not burned	69	35	21,316	34
Buildings burned, rebuilt or plans made	28	14	8,766	14
Buildings burned, not rebuilt no plans made	56	28	10,966	18
Buildings burned, rebuilding questionable				

Source: Mail questionnaire

Table 11.--Number of ownerships and acreage on which seed trees were left

Seed tree status	Ownership		Acreage 1/	
	Number	Percent	Acres	Percent
Some live trees reserved for seed or harvest	90	45	16,172	66
No live trees reserved for seed or harvest	85	43	[illegible]	[illegible]
Some live trees reserved but an inadequate supply	5	3	468	2
Leaving of seed trees not indicated	18	9	1,843	7

1/ Acres represent burned acreage less the acreage in fields and open pasture.

Source: Mail questionnaire

Table 12.--Ownerships and acreages on which various means of rehabilitating land are being considered 1/

Rehabilitation measure	Kind of ownership							
	Resident		Nonresident		Unclassified		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Will consider planting	10	2,823	8	490	3	3,715	21	7,028
Will consider seeding	21	4,379	12	879	1	3,500	34	8,758
Will consider weeding	13	3,510	4	132	2	210	19	3,852
Will consider slash disposal	21	3,477	17	1,009	2	130	40	4,616
Apparently interested	18	3,239	17	3,317	2	652	37	7,208
No indication of interest	55	4,759	31	5,042	5	1,915	91	11,716

1/ There is considerable repetition in both numbers and acreages shown in this table. Where an individual indicated interest in two or more activities he and his acreage are listed under each. The acreage shown is the entire burned acreage for the individual.

Source: Mail questionnaire.

Table 13.--Intentions regarding continuation of holding burned-over land by number of ownerships and acreage

Intentions	Ownerships		Acreage	
	Number	Percent	Acres	Percent
Intend to hold land	148	75	45,926	74
Do not plan to hold land	38	14	8,508	14
Holding of land questionable	18	9	7,096	11
No indication of intention	4	2	410	1

Source: Mail questionnaire.

N
Maine
Vt
N.H.
New York
Mass.
Conn.
R.I.
Pennsylvania
N.J.
Md.
Del.
West
Virginia
MILES
50
50
00
150
TERRITORY SERVED
by the
NORTHEASTERN FOREST
EXPERIMENT STATION
UPPER DARBY, PA.